(1) Scientific Abstract

Chronic lymphocytic leukemia (CLL) is an accumulative disease of slowly-dividing, mature-appearing monoclonal B cells in the blood, marrow, and lymphoid tissues. Despite being the most common form of adult leukemia in western societies, accounting for approximately 30 percent of all leukemias, there is no cure for this disease, mandating development of novel therapeutic strategies.

Employing the fact that CD40-CD40-ligand (CD154) interactions play a critical role in immune activation, we propose to intravenously administer CLL B cells modified *ex-vivo* with replication defective adenovirus to express a functional and stable chimeric ligand of CD40 to stimulate an autologous anti-leukemia immune response. The objectives of this study are:

- determine the tolerability of recombinant CD40-L *ex-vivo* transduced autologous leukemic cells when given as an intravenous injection
- determine local, regional, and systemic toxicities of CD40L-transduced autologous leukemia cells
- determine if there is a maximum tolerated dose (MTD) of modified autologous leukemia cells
- determine the safety of coadministration of intravenous low-dose interleukin-2 with MTD of modified autologous leukemia cell

Ultimately, we wish to determine if CD40L-transduced autologous human leukemia cells can elicit a host anti-human immune response in vivo.